

REMARKS

Claims 1-4, 18-41 and 45-47 are pending in this application. By this Amendment, claims 1, 18, 24 and 28 are amended, claims 42-44 are canceled without prejudice or disclaimer and new claims 45-47 are added.

The Office Action rejects claims 1-4, 18, 20-27 and 30-39 under 35 U.S.C. §102(e) by U.S. Patent 6,526,215 to Hirai et al. (hereafter Hirai). The Office Action also rejects claims 19, 40 and 41 under 35 U.S.C. §103(a) over Hirai and U.S. Patent 5,956,026 to Ratakonda. The Office Action also rejects claims 28 and 29 under 35 U.S.C. §102(e) by Ratakonda. The rejections are respectfully traversed with respect to the pending claims.

Independent claim 1 recites selecting a key region from each of the plurality of sections and combining the selected key region from each of the plurality of sections to form a synthetic key frame that includes each selected key region within the synthetic key frame. Independent claim 1 also recites each selected key region corresponding to a portion of a frame smaller than a total frame size.

Hirai does not teach or suggest the key region and the synthetic key frame as recited in independent claim 1. The present application describes that a synthetic key frame may be created by combining regions having meaningful information or key frames in order to represent a specific segment in a video stream. See page 9, lines 6-9 of the present specification. The synthetic key frame is a generated frame that is not provided in the received video stream. See page 9, lines 6-8 and claim 45. Applicants have utilized a terminology, namely a synthetic key

frame, and desire to utilize this terminology in the claims. Therefore the claimed terminology should be interpreted in view of its definition such as is explicitly set forth in the specification.

Applicants respectfully maintain all of the arguments set forth in the response filed February 1, 2005. Hirai does not teach or suggest the key region or the synthetic key frame. Hirai also does not teach or suggest each selected key region corresponding to a portion of a frame smaller than a total frame size.

The Office Action asserts on page 12 that Hirai's col. 15, lines 35-47, col. 9, lines 5-15 and col. 10, lines 40-45 teach combining two M-icons to form a synthetic M-icon. Thus, it appears that the Office Action is asserting that one of Hirai's M-icons corresponds to the claimed synthetic key frame. Applicants respectfully submit that these cited sections do not disclose combining key regions to form a synthetic key frame that includes each selected key region within the synthetic key frame.

Hirai's disclosure must be taken as a whole. As a whole, Hirai discloses that the M-icons at best represent a frame of a video. Hirai does not disclose physically combining M-icons to form a frame that includes both M-icons within the frame. The language provided in the cited sections of Hirai do not suggest physically combining the M-icons but rather suggest that a higher level M-icon may represent a plurality of lower level M-icons. This representation is not a physical combination of more than one M-icon.

The Office Action also references Hirai's col. 2, lines 43-61 and col. 4, lines 45-60 when discussing the hierarchical structure of Hirai. However, the cited sections do not suggest the claimed combining the selected key region from each of the plurality of sections to form a

synthetic key frame that includes each selected key region within the synthetic key frame, each selected key region corresponding to a portion of a frame smaller than a total frame size.

The Office Action further references Hirai's col. 15, lines 11-47 as showing the creation of an M-icon by extracting information from an image. However, this does not suggest selecting a key region from each of a plurality of sections and combining the selected key regions (from each of the plurality of sections). Extracting information of a displayed image is not combining selected key regions from each of a plurality of sections, where each section includes a plurality of frames.

When addressing dependent claims 30, 32, 34, 36 and 38, the Office Action (on page 7, lines 3-5) states that Hirai's col. 4, lines 45-64 teaches a group of frames combined into a representative frame. However, applicants respectfully submit that these claims relate to a synthetic key frame including key regions from each of the plurality of sections, wherein each selected key region corresponding to a portion of a frame smaller than a total frame size. The cited section of Hirai does not teach or suggest these features of independent claim 1.

Hirai's Figure 10 shows a plurality of M-icons arranged on a screen. However, each of these M-icons is not a key region, as recited in independent claim 1. Further, the M-icon is not a synthetic key frame. Thus, there is no suggestion for combining selected key regions from each of a plurality of sections in order to form a synthetic key frame. Further, as previously argued, each M-icon is not a portion of a frame smaller than a total frame size. In response to this argument, the Office Action (at page 13, lines 1-4) asserts that Hirai's col. 4, lines 45-52 teaches that if an item is divided up into portions that these portions must be smaller than the whole.

Applicants would respectfully point out that claim 1 recites “each selected key region corresponding to a portion of a frame smaller than a total frame size.” The citation to col. 4, lines 45-52 relates to a scene being a plurality of cuts and each cut comprises a plurality of frame images. Thus, Hirai’s alleged M-icon is not a portion of a frame smaller than a total frame size.

Hirai discloses dividing a video stream into scenes or cuts. Each of the cuts is one frame. In other words, the M-icon represents an entire frame from a video stream. See col. 2, lines 45-50; col. 4, lines 48-50; col. 8, lines 35-43 and col. 9, lines 1-5. Furthermore, col. 2, lines 2-6 sets forth that the M-icon is produced by thinning out data from each frame (such as using a compression technique). See also col. 8, lines 39-44. Clearly, Hirai’s M-icons are not key regions from a video stream. Further, Hirai’s M-icons are not a portion of a frame smaller than a total frame size.

Hirai’s M-icons are icons. Hirai’s M-icons are used to represent a story (i.e., the uppermost level), a scene (i.e., the intermediate level) and cuts (i.e., the lowest level). The M-icons are icons such as a frame present in the original stream. This icon (or frame) from the original stream differs from the claimed “combining the selected key region from each of the plurality of sections to form a synthetic key frame.”

Independent claim 1 recites selecting a key region from each of the plurality of sections and combining the selected key region from each of the plurality of sections to form a synthetic key frame that includes each selected key region within the synthetic key frame. Hirai does not teach the selecting and combining to form a synthetic key frame. Thus, independent claim 1 defines patentable subject matter at least for these reasons.

Each of independent claims 18 and 24 define patentable subject matter for at least similar reasons as set forth above. However, applicants would respectfully like to point out that each of these claims may include different claim language and may represent different features.

Still further, independent claim 18 recites synthesizing a key region of each section into one image, to generate a synthetic key frame that includes each of the synthesized key regions from each section. Independent claim 18 also recites that each key region corresponds to a portion of a frame smaller than a total frame size and assigning the synthetic key frame to a key image locator, a hierarchical summary list for describing lower summary structures, and structural information of the video stream. As similarly stated above, Hirai does not suggest that each key region corresponds to a portion of a frame smaller than a total frame size. Hirai also does not suggest assigning the synthetic key frame to a key image locator, a hierarchical summary list for describing lower summary structures, and structural information of the video stream. For example, Hirai has no suggestion that a screen showing a plurality of M-icons may be assigned to a key image locator, a hierarchical summary list for describing lower summary structures and structural information of the video stream. The Office Action's reference to Hirai's col. 11, lines 9-15 does not suggest the features relating to the key image locator and hierarchical summary list for describing lower summary structure. Thus, independent claim 18 defines patentable subject matter at least for this additional reason.

Independent claim 28 also recites dividing a video stream into a plurality of streams where each section includes a plurality of frames, and synthesizing a key region representing content of each section into one image, to generate a synthetic key frame that includes each of

the synthesized key regions from each section. Independent claim 28 also recites that each selected key region corresponding to a portion of a frame smaller than a total frame size. Independent claim 28 further recites providing a user interface to a predetermined display to browse a video related to the generated synthetic key frame, selecting the synthetic key frame according to an input of the user and reproducing a segment represented by the selected synthetic key frame.

Ratakonda does not teach or suggest these features as Ratakonda does not suggest a key region or a synthetic key frame. The Office Action appears to cite Ratakonda's col. 9, lines 40-43. However, this cited section merely states that key frames may be clustered together. Ratakonda also specifically indicates at col. 6, lines 46-48 that each key frame represents a contiguous set of video frames. Thus, Ratakonda clearly does not suggest that each selected key region corresponding to a portion of a frame smaller than a total frame size. Ratakonda also does not generate a synthetic key frame that includes each of the synthesized key regions from each section. Thus, independent claim 28 defines patentable subject matter.

For at least the reasons set forth above, each of independent claims 1, 18, 24 and 28 define patentable subject matter. Claims 2-4, 30-31 and 45-47 depend from claim 1, claims 19-23 and 36-37 depend from claim 18, claims 25-27 and 38-39 depend from claim 24 and claims 29 and 40-41 depend from claim 28, and therefore define patentable subject matter for at least this reason.

In addition, the dependent claims recite features that further and independently distinguish over the applied references. For example, dependent claim 45 recites the synthetic

key frame is a generated frame that is not provided in the received video stream. See page 9, lines 6-9 of the present specification. Hirai and Ratakonda do not suggest these features.

Additionally, dependent claim 46 recites transmitting the synthetic key frame from a server to a terminal. Still further, dependent claim 47 recites the terminal comprises a mobile terminal. The applied references do not suggest these features.

For at least the reasons set forth above, each of claims 1-4, 18-41 and 45-47 define patentable subject matter. Withdrawal of the outstanding rejections are respectfully requested.

Serial No. 09/800,999
Reply to Office Action dated April 20, 2005

Docket No. P-0194

CONCLUSION

In view of the foregoing, it is respectfully submitted that the application is in condition for allowance. Favorable consideration and prompt allowance of claims 1-4, 18-41 and 45-47 are earnestly solicited. If the Examiner believes that any additional changes would place the application in better condition for allowance, the Examiner is invited to contact the undersigned attorney, **David C. Oren**, at the telephone number listed below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this, concurrent and future replies, including extension of time fees, to Deposit Account 16-0607 and please credit any excess fees to such deposit account.

Respectfully submitted,
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Date: September 14, 2005

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